

Research Role Profile

<b>Job Title:</b>	Research Fellow A
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<b>Responsible to:</b>	Head of research group, or principal investigator
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<b>Responsible for:</b>	Not applicable
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<b>Job Summary and Purpose:</b>
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

<b>Main Responsibilities/Activities</b>
<p>To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.</p> <p>Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.</p> <p>Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.</p> <p>To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.</p> <p>To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.</p> <p>The post holder may occasionally be required to supervise more junior research staff.</p>

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**Person Specification**

**The post holder must have:**

A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields

The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

**Relationships and Contacts**

Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

**Special Requirements**

To be available to participate in fieldwork as required by the specified research project

**All staff are expected to:**

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

**ADDENDUM**

<b>Job Title:</b>	Research Fellow in Applied Cryptography and Trusted Computing
<b>Responsible to:</b>	Professor Liqun Chen
<b>Responsible for:</b>	Not applicable

## Research Role Profile

### **Job Summary and Purpose:**

To undertake research in accordance with the specified research project(s) under the direction of the principal investigators, and in collaboration with internal and external collaborators.

### **Main Responsibilities/Activities**

To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, laboratory experiments, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.

Using initiative and creativity to identify areas for research, develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results and personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.

Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.

To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.

To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate. The post holder may occasionally be asked to supervise more junior research staff.

Main responsibilities include:

- Design and development of new cryptographic functions, for robust attestation, privacy-preserving signatures, and credential management.
- Prove the security of the new cryptographic functions, considering both classical attacks and quantum computer attacks.
- Contribute to the implementation of such functions in software. Potentially, in collaboration with external researchers, contributions to the implementations of such functions in hardware as well.

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- Design and implementation of demonstrators and applications to validate the new scientific techniques, including scenarios from the project use cases, which involve using distributed ledger technologies.
- Publications in highly ranked security journals and conferences.
- Effective collaboration with the co-researchers (internal and external) and industrial partners of the project consortium. In particular, this will involve taking the lead in one of the project work packages.
- Documentation of project outcomes in deliverables and presentations.

### Person Specification

#### The post holder must have:

A PhD degree (or equivalent) or close to completing a PhD degree in Computer Science, Mathematics, Electronic Engineering or other areas related to Cyber security. Postdoctoral research or industrial experience would be an advantage. All candidates will be expected to have a good understanding of applied cryptography and distributed ledger technologies.

#### Preferred qualifications:

- Experience and knowledge in applied cryptography;
- Experience and knowledge in distributed ledger technologies;
- Some exposure to developments in post-quantum cryptography;
- Some exposure to provable security against both classical and quantum computer attacks.

Solid knowledge in good design of security protocols based on the use of applied cryptography is required and good implementation skills are also desirable.

### Person Specification

The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.